

PHYSICAL EDUCATION  
& ITS PLACE IN A SYSTEM OF  
RATIONAL EDUCATION

BY

CONCORDIA LÖFVING

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*This Lecture is published at the special  
request of the PRINCESS HELENA.*

*MISS LÖFVING is late Lecturer to the  
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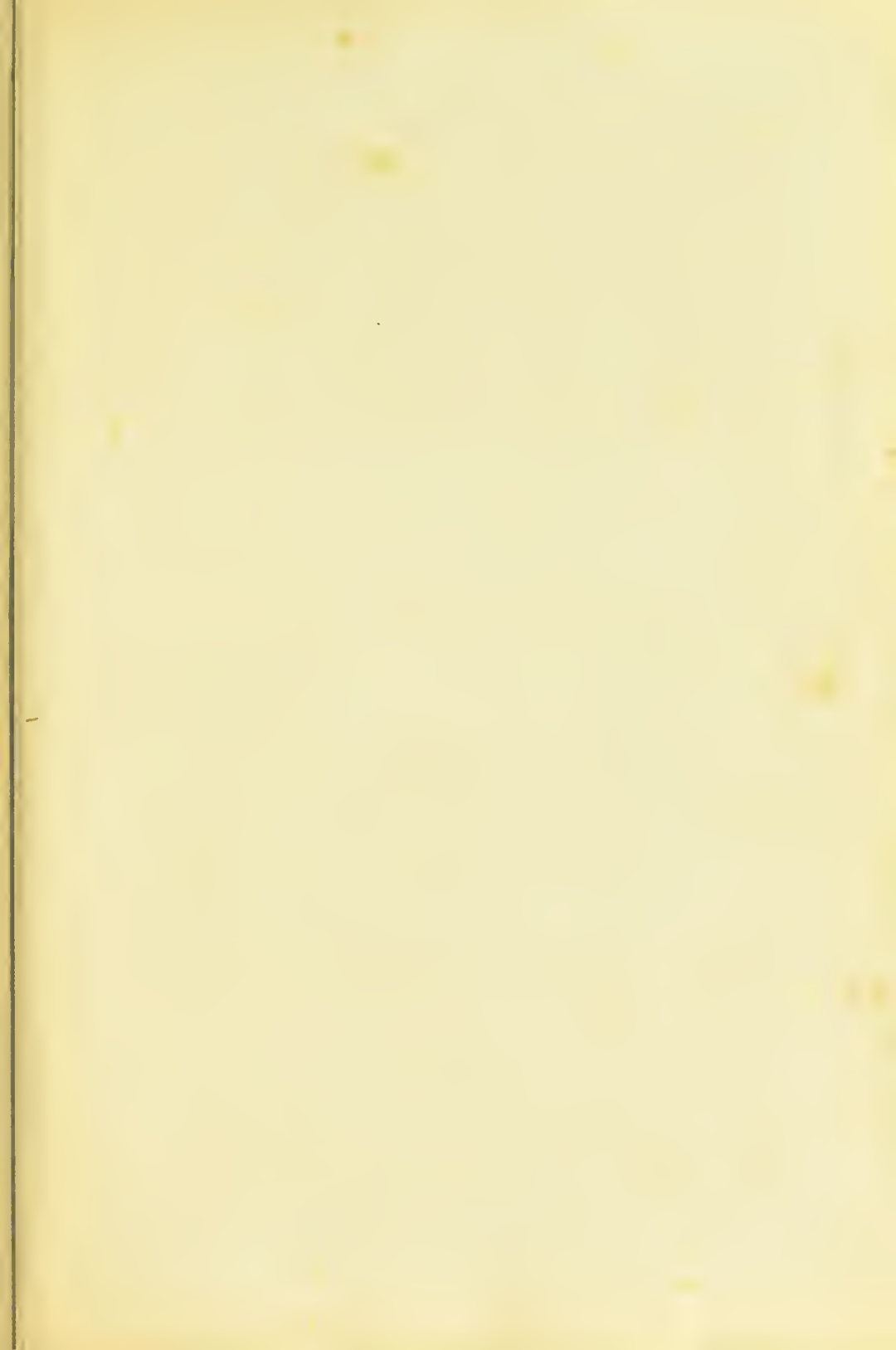
ON PHYSICAL EDUCATION,

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Concordia Lofving



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A LECTURE

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CONCORDIA LÖFVING.

*With a Portrait.*

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TO

HER ROYAL HIGHNESS

PRINCESS LOUISE, MARCHIONESS OF LORNE,

A LOVER OF GOODNESS AND TRUTH,

THESE PAGES ARE DEDICATED

BY THE AUTHOR,



## PREFACE.

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THIS lecture was first delivered, in March, 1881, before the Birmingham Teacher's Association, in consequence of an invitation I had received in the preceding autumn. It was afterwards repeated in London, at St. George's Hall, and again before the Education Society (July 28th), in compliance with a request from the President of that Society, Dr. Gladstone.

Since then, I have lectured on the same subject in Sweden (my native country) and Finland, in Italy (at *la Società Filotecnica*, of Turin) and in France (at *la Sorbonne*, Paris).

I think I may say that the courteous readiness with which, in Upsala, Helsingfors and Paris, the authorities have thrown open the halls of their venerable Universities for my lectures, is a remarkable sign of the times, showing that there is, in the old scholastic strong-holds, a willingness to receive new truths, provided you give good reasons and put them forth out of a loving heart, and not for the sake of wanton controversy.

At first, it was not my intention to publish those lectures in their present form, as I am preparing a complete work on Education, where the ideas here expressed will be more fully worked out. But seeing that it will take some time before I get my great work ready, and considering also the eager attention

and good-will with which my lectures have been received by audiences including some of the most prominent men in Europe, as well as by the Press; and encouraged as I have been by numerous direct personal requests, I have at last determined to venture on publishing them just as they were delivered. \*

"You will do good by publishing these lectures," I have been told over and over again; how, then, could I refuse any longer to do so?

Though I must say this, that to any one who has got his eyes open to the inner all-uniting *one-ness* in the multiplicity of this phenomenal world, it is almost a sacrifice to have to give his mind out, so to say, piece-meal, falling so short of the ideal he has conceived. But even to this kind of sacrifice must he be willing to submit who wishes to be of use to his fellow-men.

It is in this spirit of humble sacrifice that I send out into the world this little work in all its incompleteness.

Finally, may I be allowed to express my profound conviction, that it is by an education based on the principles laid down in these pages, that we shall lay the groundwork that will enable coming generations to solve the great social questions that agitate our time.

We must not expect to see the fruits of our best labour in our own life-time. "One soweth and another reapeth," but the time will come when "he that soweth, and he that reapeth will rejoice together."

*London, August, 1882.*

CONCORDIA LÖFVING.

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\* They will appear almost simultaneously also in Swedish and French.





WHEN I tell you that the subject of my lecture is, **Physical Education, and its Place in a Rational System of Education**, you will easily conclude that I am not going to treat physical education as an isolated fact, but as an integral part of *rational* education. Also I shall first state what I understand by education in general, and more especially by *rational* education, and then try and assign to physical education its proper place within the system as a whole.

Man being one indivisible unity of mind and body, education, strictly speaking, is but *one*, so that when we speak of moral education, intellectual education, physical education, we only mean different sides of that *one* thing—education. In practice they should never be separated, and any system attempting to do this is *irrational*, because self-contradictory.

This idea of the unity of education has already been conceived by Plato, and after him, amongst others, by the French philosopher Montaigne, who has expressed it thus:—

“ Nous ne pouvons pas faire l'éducation d'une âme et d'un corps séparément ; c'est un homme *entier* que nous avons à développer.”

Now education, in its widest sense, comprises all the external influences that act on an individual so as to modify his character, mould his will, develop his faculties; but in its proper and more limited sense it implies a systematic arrangement of external things and actions, so as to influence an individual in a certain way and for a given purpose.

The purpose or aim of education has been differently conceived by different educational philosophers. I, for my part, will venture the assertion that the aim of education is to form *men*—true human beings.

The ancients have left us the proverb: “*Nemo nascitur artifex*” (no one is born an artist); but I venture to assert that no one is born a *man*—a human being in the real sense of the word—but only with the capacity for becoming one. And I may add that on education depends, in great measure, whether true manhood shall be developed in us or not.

I lay down, then, as the general aim of education, to bring each individual to realise in his own person the idea of perfect manhood, as far as his faculties allow, even as a work of art realises the idea of beauty.

Still, the work of the educator does not so much resemble that of the great artist, of whom it is said, that he cut the marble with a kind of rage seeing the figure, so to say, imprisoned in the brute marble-block; the educator’s work rather resembles that of the judicious gardener who influences the growing plant by weeding the soil round it, and supplying it with proper matter for the plant to take up and assimilate.

There has been a good deal of arguing between different schools of educationists as to whether education should aim more at the development of what is generally human in a child, or of what is

particularly individual in him. I shall, perhaps, be able to take up this question later on. I only wish to state, for the present, that I consider that the making a child fit for the general vocation of the human being, should have the precedence before the preparing him for any particular avocation or profession.

We should do the one, and not leave the other undone. I even go so far as to grant that there are human individuals of such decided propensity in *one* direction, that it is only through this one opening that the educator can act upon their mind at all. But permit me to say that any education that makes of a child *only* a doctor, a clergyman, a natural philosopher, a painter, a teacher, a merchant, a soldier, a statesman, &c., and not, at the same time, a *real man*, has been, more or less, a failure.

What, then, is this true manhood, this realisation of the idea of humanity?

Our anthropologists define Man as a sensual-rational being, but this definition holds good only for the brute man, if I so may express myself; the complete, the perfect man is a being *who can do what he wills, and who wills what he ought to will*; one who has made his choice between reason—that is, his rational self—and sensuality, and uses the latter to serve the purposes of the former. (If this is the definition of a true man, I am afraid there are many who never attain true manhood, though they all may have a right to be reckoned as belonging to the Zoological species *Homo Sapiens*).

Some people may think that this is placing the ideal too high, for I am aware that there are those who doubt the higher destinies of mankind—people beset with what I would call *doubt-disease*.

But there are two facts which, combined, furnish,

I think, the almost irresistible conclusion of the perfectibility of mankind, and at the same time give as a corollary the truth that a deliberate educational influence of the older generation on the younger, enters into the plan of the creation of the human race.

These two facts are : on the one hand, the impossibility for a human being, if left entirely to himself, to develop just those faculties and capacities which, by common accord, are considered most characteristic of our species—the capacity for a reasoning language, for instance ; and, on the other hand, the wonderfully strong instinct which induces nearly every human individual to try and teach others something. And surely I need not remind Christian men and women that the doctrine of human perfectibility also agrees with the Gospel itself ; Christ would not have said : “ Be ye perfect, even as your Father in heaven is perfect,” if He had not Himself seen the possibility for human beings to attain perfection.

However much people may differ in their opinions as to the aim of education, and the means that should be employed, what subjects should be taught, and how, what course of discipline pursued, and so on, I think that every one will agree with me when I advance the opinion that any one who takes upon himself to educate children should make up his mind as to the goal he aims at, and know how to choose the very means that best conduce to the desired end. For instance, the educator has to choose between certain subjects of instruction. He should be able to judge of their respective educational values, weigh them against each other as it were, and arrange those that he chooses in the order that best promotes his object.

In the education of the ancient Greeks we can trace such a unity of purpose and means. Their human ideal was, perhaps, not so high as the highest modern one; their educational means were more restricted than ours; but they had an admirable skill in arranging them so as to secure their purpose. When the Spartan Agesilaus was asked by the Persian, what one should teach a boy, he answered, "That which you wish him to practise when a man."

That, only, is a rational system of education where there is a decided aim, where the means used are chosen according to their power of promoting the attainment of this end; and, first and last, where both the aim and the means are in full accordance with the nature of the human faculties and the laws of the organism. Hence it follows that the educator, whose task it is to develop the human faculties for a given purpose, should know what these faculties are, and this by means of a thorough study of the nature of the being that he is going to educate, not by learning the names of the faculties by heart for an examination. He should not only be a thorough psychologist, he should also have studied seriously the *physical* conditions of the intellectual and spiritual development of man; in a word, his anthropological knowledge should be *complete*, embracing man as a whole. Then he would not so easily be tempted, as has hitherto been the case, to separate in his educational labour what God has united so closely as mind and body.

Now somebody may say: but this decidedly presupposes that the educator should be an extraordinary person—a speculative and practical philosopher, as well as a physiologist. What then? Would it not be a great gain to humanity if only the most excellent, the most highly gifted persons were to undertake the



supreme conduct of the education of children? For the different subjects such a person could, if necessary, affiliate with himself skilful and clever subject-teachers; but—I repeat it with stress—the educational plan and the supervision of its application should belong to an *anthropologist*, in the deep and complete sense of the word.

The more the whole arrangement of the different subjects that form the curriculum in a school—as to amount, co-ordination and sequence—approaches that which would be made up by *one* teacher or educator of the merit I have suggested above, if he were to take upon himself the whole teaching, the greater would be the educational value of that school, the more harmonious the development of its pupils, the greater the prospects of satisfactory progress without the risk of any kind of over-exertion. It would carry me too far to enter into all the details of such an arrangement, but the outlines of it would be something like the following:—

The *Principal* having made up the curriculum and ensured a general good parallelism in the subjects, each teacher would have to work out the details of his own subject, so as to bring both the quantity and the quality of his teaching into harmony with the whole; though the latter, or the particular mode in which the teaching is being done, of course always to the greatest extent depends on the individuality of the teacher.

Every week, before the teaching begins (or twice a week, if necessary) all the teachers should meet the *Principal* and give notice of what they are going to take up with the pupils each day in the following week, and especially what amount of home preparation will be required of them. It will then be the



task of the Principal to adjust any disproportionate demands, and avoid making a more than usually difficult part of one subject come on the same day as some very difficult part of another subject, and so on; and the transactions should be shortly recorded in a book kept for the purpose.

By adjusting disproportionate demands, I do not mean to say that it would not be a reasonable thing sometimes to carry on one subject more vigorously than the others, but this should be done deliberately, on good grounds, not by mere chance. For instance, *I* have found it answer very well to give a good deal of time when taking up a *new* subject, say a new language, as the strong impetus and concentration thus given to its study in the beginning, contributes to bring about an accuracy in the knowledge, and often such an amount is gained in a few months as would perhaps have required years and years, if the great eagerness with which children—especially girls—take up a new subject, had not been responded to by allowing them a more continuous study of it. But then I have, at the same time, always been careful not to let them begin any new language till the pupils had mastered so much of the one previously studied that it could be kept up efficiently, though the greater number of hours assigned to it were taken away and given to the new-comer. The natural sciences (Botany, Zoology, &c.), should be more vigorously pursued during the fine season when outdoor excursions can take place, and so on.

As I started from the premisses that the educator should have a thorough knowledge of human nature, on its physical as well as its mental side, you will find it natural if, whilst proceeding with my subject, I do so, constantly keeping in view human nature and the way in which its faculties unfold themselves.

In this field two hosts of philosophers stand in opposition to each other. On the one hand, those who, like Plato and Leibnitz, believe in innate ideas ; on the other hand, those that hold with Locke that the mind is empty, and that all our ideas enter into it through the senses, even as the rays of light enter through the windows of a dark room.

This last-mentioned doctrine forms the very kernel of empirical philosophy, where everything is supposed to be based on experience ; and, for all that, it is just *experience* \* that teaches us that there are in our mind ideas which we cannot possibly have gained through our external senses, as they are about things that cannot be conceived by these, and which we, therefore, style *transcendental*. Besides—as Kant showed in his *Kritik der reinen Vernunft*—the faculty of knowledge cannot itself be the product of the external senses.

But there cannot be the slightest doubt that the communication between the spiritual and the bodily spheres in man, resulting in self-consciousness (or a reasoning soul), is first brought about through the sensations.

I mean that no consciousness or mental activity would awaken without the aid of external sense-impressions. When man makes his entrance into “ this breathing world,” then it seems as if the parts that in the first place are the organs for his mind were in existence only as rudiments. And even the action of his external senses, though the organs are there, is not perfectly established.

The new-born child neither sees, nor hears, in the proper sense of the word ; for we should remember

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\* An internal experience.

that seeing and hearing ultimately depend upon a mental perception, and this faculty is not yet in operation.

The first movements of the infant are reflex-actions. Even the first cries of the helpless little creature belong to this class of manifestations of life. But the organs for the external sensations, as well as for other functions, are all in existence; and they are gradually perfected by means of repeated action on them by specific irritants, such as rays of light for the eyes, and waves of sound for the ears. Then, again, these different impressions are carried through the agency of the nerves to the brain, which is acted upon by them, and thus developed so as to become a suitable organ for the mind to work with.

For when this organ, this receptacle of the sensations, has reached a certain amount of development, then it seems as if it were all at once struck by the rays of the primitive energy that we call *spirit*, and the consciousness of existence then vibrates through the human being, at first dimly, in the form of emotions and half-reflected impressions, but later on more distinctly, in the form of ideas, will, self-determination, conscience; and his faculties increase in power and distinctness the more the mental organ, or organs, have been exercised to *spirit-reception*, if I may use this expression.

Thus, the communication between the spiritual and the bodily spheres in man, of which I spoke before, has been consummated, and the reasoning activity of the mind begins.

When it begins in each individual, seems almost impossible to ascertain, but most probably it begins long before the child can give any comprehensible expression to this mental and conscious life. For we

should remember that he cannot do this till he has obtained a certain command over the so-called voluntary muscles, as it is through their agency that mental life, and its different states, expresses itself. Now, though these muscles, in later life, are under the control of our will—as the name implies—this is *not* the case in the early period of our existence. It is only gradually, and by means of repeated endeavours, that this communication between the will and the muscles is established.

It takes time ere the child can grasp firmly the objects presented to it. The *will* is there ; we recognise the fact through the adjustment of the eyes, which is one of its earlier attainments in muscular co-ordination. And how long a time with repeated endeavours does it not take before the child can be brought to walk, or articulate words !

Later on in life, many of the attainments which we acquired with so much thought and labour in our earliest days, pass almost over to the field of the involuntary reflex-movements.

We can walk, on even roads, in a mechanical way without thinking of adjusting our muscles for the performance of the separate motions, and even while thinking of something else ; we can talk (most of us, at least,) without paying special attention to the sounds and the adjustment of the organs of speech that they involve ; we can write without bending our mind to the formation of the letters. The first start to these and similar occupations is given by the will ; the rest comes of itself, as it were. And this very thing is a great benefit for education ; it enables us to learn more and more, and to enter upon higher and higher paths of action. Only think, what would become of the crea-

tions of our parliamentary orators, our much-producing authors, if they had to pay as much attention to the formation of the sounds and the letters of the various words, as when they were still in the nursery or on the school-form !

I mentioned that the brain seems to get its first impulse to development from the effects produced upon it through the external sense-impressions, and that, at a given stage of its development, higher forces begin to act upon it. The use that the mind makes of its organ develops and perfects it still further.

This is in analogy with what we know about the effect of the *action* of an organ upon the organ itself.

When, for instance, the eye has come to a certain stage of development, it is ripe for the daylight, and then the exercise of its function, the very act of seeing, perfects it still more, as far as its nature admits of. The muscles that are being used, besides what they gain in their own development, have in the long run a great effect on the surface of the bones into which they are inserted, so that such points of insertion form elevations or roughnesses ; in a word, all those different appearances that the anatomists call a *spina*, a *tuberculum*, a tuberosity, a condyle, and so on.

How it actually happens that the immaterial force, the spirit—the *mind*, as you call it—acts on the matter, albeit in the most subtly arranged brain-substance, we do not know,—and I don't think that even the *Harmonia Præstabilita* of Leibnitz gives a quite satisfactory explanation of this problem.

If we could understand this action, then the very enigma of life would be solved. With our imperfect knowledge of things that go beyond our external



senses, we can judge of such matters almost only by means of analogy with matters that fall under our external sense-perception; our very language is so poor that we want fully adequate expressions for *super-sensual* things.

For all that, we know that these experiences of the immaterial world—the one that we sometimes call the *inner* world—are as true as any of those that we gain through the external senses; and it is not less a sign of an abnormal, a diseased state of the nervous system, if we doubt of the existence of that world, than when any one, with Pyrrho, doubts the existence of the external world.

There is reason to believe that through the double agency of the external sense-impressions and the purely mental action a sort of differentiation of the brain-substance takes place—something analogous to the general differentiation of the tissues in the embryo that gives rise to the different organs in the body; so that a certain part (or certain parts) of the brain is the organ for a distinct mental faculty or mode of action; though, of course, the whole brain, to a certain extent, is implied in every kind of mental activity.

Among the most forcible reasons for concluding that the brain is itself composed of different organs, is the fact that certain parts of the brain are to be found only in the higher animals; so that as we proceed upwards in the chain of the animal world, there is not only an increase in the relative bulk and weight of the brain, but also additional parts developed in the higher classes. (In the lowest—the one-celled animals—there is no differentiation whatever).

Besides, there are so many cases on record where, in a post-mortem examination of the brain of such



persons as have been known for great mental activity and capability, it has been found that the *gyri*, or convolutions of the grey matter on the surface of the brain, were more numerous and more distinctly grooved than in the brains of people of less ability.

There seems nothing unreasonable in the hypothesis that the brain may be an aggregation of organs united by a kind of common *sensorium*, so as to ensure sympathy and unity of action.

So far the phrenologists seem to be right, but this does not vouch for the accuracy of the *conclusion* that they draw from this hypothesis, namely, that it is possible to judge from the bumps on the outside of the cranium as to the characteristic abilities in each individual; for in most cases it has been found that the internal lamella of the bones of the cranium has not had any depression corresponding to the convexity or bump at the outside. It would, therefore, seem rather an unsafe expedient to follow implicitly the advice of the phrenologists to base education and the choice of a profession for a child on the bumps that may be found on his head.

To avoid misunderstanding, I will emphasise the fact that what I said before about the probability of the brain being an aggregation of organs, does not in the least weaken the doctrine of the mind being *one* and indivisible. It is only its *physical organ* that is supposed to be of complex nature.

Man, then, is, so to say, a universe in miniature—a plurality pointing towards, or converging to, a unity.

There certainly is nothing blasphemous or materialistic in the thought that for each mental or spiritual faculty, even the highest, there may be a distinct physical organ—even for the faculty of per-

ceiving *God*—the God-sense, if I may so call it. And is it not a fact within our experience that this faculty, this internal sense, may be strengthened through suitable exercise, and that want of exercise diminishes this faculty?

This sense of God—and the higher moral consciousness which it implies—wakens at very different ages in different individuals; it awakens very early in most children, if brought into contact with persons in whom the knowledge of God is a living one, and not merely a stereotyped form of habit of thought.

Here we have, then, a new and higher state of spiritual and mental development, distinct from the first one, where the mind first begins to use its organs.

I need not tell you that there is nothing which so much promotes the growth of true manhood in us as the spiritual impulses gained by the conscious communication of our soul with God.

Also I do not think that the educator will succeed in his task, even if he had all the intellectual premisses necessary for his work, if there has not dawned within himself a higher life.

If the holy flame of truth and love has not been kindled by the Divine Spirit in his own mind, how can he set young souls on fire?

To religious instruction more than to anything else I would apply a saying of Plutarch: "The human soul is not a vase to fill up; it is a *hearth* that one should *heat*;"—though, however, this image expresses in an admirable manner the *rôle* of all teaching for educational purposes; and I, for my part, do not admit of teaching as distinct from education, in so far as children are concerned. I also think it is a fallacy to speak of moral teaching as

something *different* from religious teaching. If religious teaching is not *moral*, then it is *false*. Again, moral teaching, if it is to deserve its name, must have for its basis the belief in a personal God who is good, and wills the good, and has made man to be conscient with him in this matter.

Bring the child to feel the presence of God, that will be his best moral safeguard; and may his device be that of Linnæus: "*Innocue vive; Numen adest!*" (Live innocently; God is present!)

I have already stated what should be the leading principles for choosing the subjects for study, or for making up the curriculum of a school.

The subjects should be chosen, in the first place, according to their educational value, that is, according to their power of developing the faculties, and only secondarily with a direct view to establishment in life. But as the pupils advance in age, the latter point must be taken more and more into consideration—more especially so for children whose circumstances force them to go out into the world as soon as possible to earn their bread.

Broadly speaking, the faculties are: Perception, Discrimination (Analytic power), Memory, Imagination (including Constructiveness), Judgment (implying power to conclude effects from causes), and among the latest developed comes the faculty of classification, generalisation and abstraction.

Then there is the emotional sphere with the higher feelings—Veneration, Sociability and Sympathy, the love of knowledge and truth (something higher than mere curiosity), the sense of justice and order, which should all be cultivated. And there is the *will*, the power of volition, which can be strengthened and turned in the right direction through

intellectual, emotional and physical means combined. And the great question in education is just to get at the *will* of a child, and give it the right direction; for a human being who really *wills* the good can never entirely go astray: he is the righteous man of whom it is said that he falls seven times but rises up again; and he will be sure to carry on his self-education throughout life.

In order to ascertain a healthy and harmonious development in the child, all his different faculties should get their respective share of cultivation, not forgetting his craving for activity, for something to do in the form of manual work. Not so very many subjects are necessary to this end as some people think, and never more than three or four subjects of instruction should be studied at a time by a child; and even this restricted number should come in gradually, not all at once.

There can scarcely be done a greater intellectual injury to a child than by continually forcing it to prepare many different lessons at a time.

Infants, of course, require a great variety of objects to gratify their dawning power of observation. But as soon as children arrive at school age, and, besides the object lessons, have real tasks set before them, then they should before all be taught *how to learn*, so that their plastic minds may receive impressions for life, and so that they do not assume the baneful habit of leaving a task before having thoroughly mastered it. The child should, therefore, have neither very long, nor many lessons at a time, but the teacher should insist on his knowing and understanding his lessons thoroughly; and he should not begin to give his pupils lessons to prepare at home till they have been, during some time previously, taught how to work by

themselves; for many children lack method when learning, and thus waste time and lose heart over their tasks.

When the educator has to choose between several subjects of nearly equal mode of acting on the mind in its unfolding process, he should choose the one that, besides being most appropriate to the age of the pupils, has the greatest value from an ethical or social point of view; I mean, that would help him either in influencing the will and judgment of the child, or that promises to be of most use to him in after life, in giving him either directly useful knowledge or the means of acquiring such knowledge in future.

If with these conditions can be coupled also that of gratifying a given intense proclivity or liking in a child, it would be a great gain.

Still, I may as well say now that I do not think that a child, as a rule, should be allowed to choose the subjects of his study, or his career in life, till about twelve years old; but at that age he should be allowed to begin to have a voice in the matter.

I think that, at all events in schools, all children below that age should be taught the same fundamental subjects, so as to make sure that no embryonic faculty be in danger of dying out for want of culture; the more so as the liking for, or the dislike of, a subject in a child is not a sure criterion of his proclivities: there may be a something in the teacher's person or his method of teaching, there may have been a word uttered by a parent against the subject and caught up by the child.

I remember once a girl was introduced to me as having no talent whatever for languages, whereas I soon found that this supposed defect came from her



former teacher being a good naturalist and a poor linguist, with a very inefficient method in the latter respect.

Now, I do not say but that there are cases on record where the proclivity for one subject has been so absorbing that the child has had no inclination for anything else. The right way of treating such a child would be to let him follow his tendency and try to make the best of this subject for the development of his faculties. These once in a fair way of development, he could be brought gradually to master a few indispensable subjects besides.

You all know the story of my great countryman Linnæus, whose love for botany was so absorbing that he could not get on with the ordinary school studies, which, in those days, were meant especially for forming clergymen.

When he came to the University, where he had opportunity to pursue above all his favourite study, then he got on very well with the rest.

Where a child is very different in its development from other children, or if it is very backward, or deprived of any one sense, it is, I think, better to have it instructed privately, or in special schools. The ordinary schools should be for normal children.

In a low state of mental development, either normal or abnormal, the children should have the very best teachers; *mind*, I do not exactly mean the most *learned*, I mean those possessing the greatest methodical ability. This, I think, is a truth that is not generally recognised, seeing that there is still a tendency to think that the inexperienced, not to say indifferent teachers, will do for the lower forms in schools and as teachers for the children of the people;—but I hope the time will come when it will be



generally acknowledged that for these only the best are good enough.

Before entering more particularly into the question of choosing subjects during the period of the proper schooling-age, I will say a few words about the period preceding it.

If the mothers were well prepared for their duties, and could devote their time almost entirely to their children, I think it would be best if this age, when the great seeds for future life are laid down in the children, were left entirely to the "*Informatorium Maternum*," the Mother-school, as Comenius—the great precursor of Rousseau, Pestalozzi, and Fröbel—calls it.

It is rather a sad view in these great cities to see hundreds of little infants brought together and made to sit as grave as old men and women.

It can only be looked upon as a necessary evil that infants are put to school at all, but if they must be, they ought to be instructed and occupied in about the same way as a well-educated and tender mother would instruct her children—showing them objects and images of objects, and giving little interesting stories on these, in the tone and language that caress the ear and cheer the heart in the nursery. And the child should be allowed to bring objects and ask the teacher for explanation, and the teacher should have sufficient knowledge of the natural sciences and of child-nature, to be able to give explanations, at the same time true and suitable to the age of the inquirer. But to carry this out, each teacher should have only a limited number of children to take care of.

And there should be a garden to each school, for the double purpose of providing the children with natural objects of instruction and amusement, and

permitting them to move about as much as possible out of doors, so that the little human plants may get their necessary share of God's sunshine.

Though Fröbel used ready-made gifts for his *Kindergarten*, in order that there should always be some object of inspection to start from, it was never his intention that these should entirely take the place of natural objects of observation.

When the faculty of perception in the child has developed into discrimination, so that it distinguishes differences in form, and size, and colour, then its imitative and reproductive powers may be gradually called into action, and it can be made to try and reproduce objects by drawing or by modelling, in the way which is being done in every good *Kindergarten*. The writing should first begin years afterwards, when they have acquired some skill in drawing, and simultaneously with the first reading lessons.

They should also gradually, and in a concrete manner, be initiated to the operations of arithmetic by counting objects at hand.

Even in the *Kindergarten* system, however admirable it is when well conducted, I think there is sometimes a tendency to give too little to the child's imagination. The narrative should play a great rôle there, and the *Kindergarten* teacher should be a good story-teller, and take as much delight in telling tales as the children in hearing them.

And the children should be gradually induced to tell over again the stories and fables they have heard, and repeat little poems, and sing little songs and hymns; this not only has a great influence on the development of their organs of voice and speech, and their faculty of language in general, but the tales, the poetry, and the songs, develop imagination and

sympathy, which go far to form a refined, and vast, and superior mind.

But on no account should the daily occupations of infants under seven years keep them sitting or standing immoveable more than twenty minutes at a time; for we should remember that their natural condition is to be on the move, only with intervals of quietness. Therefore bodily exercise, especially in the form of play, should fill up at least half the time for infants at school. Up to three years of age play should be their sole occupation, and if between three and five you begin to give them little tasks of suitable manual work or other easy duties, these should come only as short intercalations between the games, and their amount in the day should not exceed four times twenty minutes. This mode of using the time in the infant schools ensures not only a good physical development, but also a corresponding mental one. It is a pity that those gentlemen who make regulations for infant schools do not sufficiently recognise the wonderful educating influence that *play* has on children. They would not then have put the screw of examination and grants for results on such schools.

Fair play, in the literal sense of the word, is a good preparation for the later serious duties in life.

I ought now to show how the curriculum of a school should be made up on the grounds I have laid down as rational, but it is impossible to enter into minute details in a lecture of this kind.\*

In the first school-year (the eighth), besides manual work and drawing, and writing, and sing-

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\* I am preparing a complete work on education, of which the first part, "Physical Education: Theory and Practice," will appear ere long.

ing, all of which should be continued throughout the school, together with systematic muscular exercise—of which I shall speak more at large later on—the child should continue learning his mother-tongue, solve easy arithmetical problems, and get simple and interesting object-lessons mostly bearing on natural history; then the first concrete notions of geography and history should be taken up, the latter in the form of biographies.

No home-preparation should be exacted for this latter subject during this stage.

When the children are well grounded in the reading and spelling of the mother-tongue, then a foreign language can be taken up. For it should not be forgotten that *one* language thoroughly well learnt in early childhood has the power of developing the *faculty of language* in a way that can never be done so well later on in life.

Mathematics should enter next into the programme on account of the wonderful formative effect it has on the mind.

About the eleventh or twelfth year, children who have been rationally taught will be well prepared to have a more scientific and consecutive teaching in physics and chemistry than what has been given to them in their object-lessons, but then one or two of the previous subjects would have to be left off as study—geography for instance. Having once acquired a good knowledge of the subject, it could be kept up simply by reading appropriate and interesting accounts of travels.

When arrived at the age of thirteen, children of average ability, if they have been rationally taught, ought to be so advanced in the knowledge of their mother-tongue that several of the hours assigned to its

study can be made available for an optional subject: either algebra, or zoology, or botany, or mineralogy, or astronomy, or a second foreign language, modern or ancient.

The first foreign language taken up in the curriculum should be a modern one. That there is a good deal of disciplinary and educative value in Greek and Latin cannot be disputed, but so there is in French and German. I think the right course, if a *child* is to learn several languages, would be to begin with a modern one—say French. Later on, when about twelve or thirteen years old, he should be allowed to make his choice of certain subjects (see above), then let him choose the dead languages if he has an inclination to become a philologist, or if he wishes to prepare himself for one of the professions for which they are required.

But if a grown-up person were to begin to learn languages, with a view to becoming a philologist, there is no doubt but that he ought at once to proceed according to a scientific and comparative method, and the right way for him would probably be to begin with a mother language—say Sanscrit—and then take up the daughter languages.

But I, for one, am convinced that this would not be the right procedure with a child. The first foreign language taken up with a child should be chosen especially with a view to developing its faculty of language, and, not least, with a view to the physiological side of this faculty. I mean to say that, for childhood, the learning of a foreign tongue with sounds so beautiful and distinct as, for instance, Italian, Spanish, French, and a couple of others that I could mention, has the greatest educative influence on the organs of speech. This is a fact that has



been too much overlooked for the question of grammar.

Now, of course, when we have the choice between different languages that can very nearly serve the same educational purpose, we should choose the one that is likely to be of most practical use to the child ; this rule should especially be acted upon in the *school*, where the interest of the majority is to be taken into consideration, and I therefore think that the fact of France being a neighbour speaks in favour of taking up French in preference to any other language.

Only think what a corrective effect French, *if well taught from the beginning*, would have on the organs of speech of English children !

The good mental discipline in the German grammar would come in very usefully a few years later on, and be somewhat of a compensation to those who do not study the ancient languages.

In a rational system of education the *method* of teaching the different subjects should be evolved out of the nature of the subject itself, and be different (or at least modified) for different ages and different stages of development. Let me take an instance :— If we begin teaching a child of eight or nine years a foreign language, it would be to transgress these conditions if we were to take the grammar and the systematic arrangements of the parts of speech as a starting point. For the scientific classification of the parts of a language belong to a more *advanced* stage, to which the child should gradually be led up. Again, those who argue that a foreign language should be taught precisely as the mother-tongue, also err from the point of view of method. For when the child begins to learn a foreign language at school, he is no longer in the age and state of development he was in

when he began to learn his mother-tongue. With the use of a proper and superior method, he ought to be able to learn the foreign language in *less* time than he learnt his mother-tongue. (Remember how many years this took him !)

The best method for the early stage I have found to be a kind of parallel arrangement, so that instead of learning rules of pronunciation, grammar, and vocables, so to say, independently of each other, you have corresponding parts of these different sides of the language arranged in lessons forming together a little whole. This method, besides making the children very sure in their pronunciation and in the grammatical forms of the language, gives them a rich treasure of words, and renders it easy to a teacher who knows the language well, to induce the children also to speak it.

I think it *rational* that there should be a certain amount of religious instruction taken up in the curriculum throughout the school; but, in order not to counteract its own aim or the aim of the whole system, it should be given only by a man, or a woman, who can teach these holy truths so that there shall be no need for compulsion. There is not *one* subject that children take more delight in when well taught, none that they abhor so heartily if taught in a formal, heartless manner. Besides, religion should go like a red thread through the whole school, so that it should not be as *Grundtvig* said about the Grammar Schools (the black schools, as he calls them): "They flog heathendom into the boys six days a week, and then they want them to be Christians on the seventh!"

Another subject that I think should go through the whole school is *History*, and this on account of its



great educational value, which, it seems to me, is very much overlooked in this country.

To teach the subject simply in the form of chronology, as is so often done, is worse than not teaching it at all—it is a calumny, a caricature of history. For history is something far more than what can be acquired through memory alone. It gives the best exercise in ethical causation—in tracing the relations of moral causes and effects;—it sharpens judgment in matters human, it feeds imagination, it kindles veneration, sympathy, and love of justice. I repeat it, history has the highest educational value, if taught by a teacher who has himself a touch of *the Genius of History*, and possesses the narrative power that is needed to make bygone times and persons take life again before the minds of the children. \*

I recommended before, as you remember, that the imagination of infants should be fed by means of really good and poetic children's stories, not *over-fed* of course. In my country we have, besides the treasures of fairy-tales common to all the peoples

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\* It seems to me that if any people need this study more than others, it is the English, who have inherited the aspiration to the leadership of the world from our Scandinavian ancestors. And I cannot see why this nation should not have it, if she can gain it by fair means.

I have often been sighing : O, for a strong people that would stand up and say : " We pledge ourselves to God and men to keep the balance of justice between the nations of the earth," and I sometimes hope that this will be the English. But, to take upon themselves this awful responsibility, the citizens of this nation ought to learn from bygone times that wisdom which is a guide to the understanding of the present and the future ; or there may come a time when this great empire also will be precipitated from its height and share the doom of ancient Rome, of which it was said : " She fell—and she deserved her fall !"

of Aryan origin, the wonderful *Sagas* of the Scandinavian peoples contained in the *Eddas*, and in *Saxo Grammaticus*, from which we can make selections for the children; and I do not see why *you* should not also scoop of the same rich fountain of eternal youth.\*

O, if people only knew all the moral influence that the poetic truth and beauty of such tales have upon children! I cannot help thinking that if the little French children got the proper food for their imagination when still children, there would not be among the nation so many youths, so many young authors, with a diseased imagination.

I laid down, if you remember, as leading principles for choosing the subjects of a school programme, that the choice should, in the first place, depend on their educational value and the amount of useful knowledge they would impart, and that about the age of twelve the child should get more scope for individual proclivities and for such subjects as would fit him for a vocation, a profession, a career in life.

For poor children, who must go out early in life to earn their bread, I am afraid the preparation for their avocation in life must begin somewhat earlier—at least in the present state of society; but I hope we are approaching a time when all children of normal abilities will get the same school-education, at least up to the age of twelve, and this an education of such rational and sound quality that it can serve as a basis for any start in life.

When I admit, or even advocate, the necessity of training children for a certain avocation, I do it with reservation against any *cramming* for examinations.

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\* Shakespeare owed Hamlet to Saxo Grammaticus.

If examinations there must be, it is not therefore necessary that the arrangements of the whole school should be made with a view to the examinations.

If a child, by means of a rational method of instruction, is made quite familiar with a subject, a repetition a couple of days previous to the examination would prove sufficient.

I think at the present time it is all but universally recognised that it is necessary to make each child fit for a vocation in life; but it has astonished me for many years to see that there is a vocation, a state in life, which I think about nine-tenths of human beings take up without any preparation at all—I mean what is called “the holy state of matrimony.” As if it were the easiest thing in the world to become a good husband or wife, or father or mother of a family! As if the proper discharge of duties belonging to that state did not exact certain moral, intellectual and physical qualities, just as much as any of the social professions or states that we take up as a living! And for all that, all of us agree in considering the quality of the thousands and thousands of homes of which the nation consists, as the very life-principle of the State!

I think it would be rational if, in the finishing classes of the schools, corresponding to the morning-spring of youth, there were given some theoretical preparation for the social duties that lie before the young. Of course this should be done with tact and wisdom. It would not do, for instance, if the teacher were to begin by saying to a class of boys or girls: “Now, as you may be married some years hence, I want to tell you what will be your duties in that new state of life.”

Such a subjective way of treating the matter would not answer; it would hurt the feelings of the young.

But in the division of the school that should form the school of youth, that is, form the transition between the child-school and the world, there should be taken up a subject that I would call the *knowledge of man*, or Anthropology in its fullest sense.

You remember I started from the supposition that the teacher, who is at the head of an educational establishment, should have studied human nature thoroughly; he or she could, therefore, be expected to teach this subject.

It would have the following subdivisions:—

*Physiology* and the Laws of Health, including simple means by which health can be preserved.

*Psychology* and *Logic*, that is to say, the knowledge of the human mind, and of the development of its faculties, together with the laws of thought and sound reasoning.

*Sociology*, or the knowledge of social duties and fundamental laws (based on the study of history); for the citizens that are to be should know something of civic duties.

*Economy*, political and domestic, should also have its place in this course.

The whole of these anthropological studies should have as their *alpha* and *omega*, their basis and life-giving spirit, *Ethics*, or practical philosophy, which ultimately converges with religion in spirit and truth.

For we are to become citizens in two worlds, and education ought to fit us for this *double* citizenship.

There could, in such a course, be given a whole world of useful knowledge as a preparation for life's battle, its duties and temptations. But there should be life and unity of purpose in the teaching, it should not be dry schemes with lists of names. There should come in a good many biographies of men and

women, of the kind that would warm the heart of the young with noble feelings ; and there should be pithy sayings that they could treasure for life ; and how many experiences from real life would not a wise teacher find opportunity to give at proper moments !

A great part of this anthropological course should be carried out in a genetic manner—in the way Socrates taught—whereas other parts, as I have already suggested, would be with more benefit taught in the aehroamatic manner.

There would, in this course, be given the principles on which their education has been carried out, and some of the observations made on the working of the system. As the institution advances in age, it would be worth while to keep on record the careers and lives of former pupils ; not, however, for the sake of boasting of eminent persons having passed through that school ; for it is desirable that the school should be placed in such an independent position, that it should not want to draw pupils by means of puffing.

There should be given an account, not only of the principles and means by which their moral and intellectual education has been carried out, but also the same as regards their *physical* education, as forming an organic part of the whole ; or, as somebody has put it, “ being the foundation of all successful training.”

They should be told how the education of the generations to come should even begin with the parents preparing themselves for their wonderful task, which, in holiness and highness, surpasses any other task, any other office on earth ; and how it is the duty of the parents to try and keep themselves healthy both in mind and body, that their children may not be born with constitutional defects likely to hinder their development.



They should be told of the phenomenon that is called *atavism*, how the progeny of a vicious person—a drunkard, for instance—are (sometimes unto the third and fourth generation) in nine cases out of ten, born with the same tendencies, or have to bear in another form the consequences of the misdeeds of their ancestors, as idiots or as victims of epileptic fits and other ailments. They should be told how, with every little child that is born, there is a new in-pouring of innocence into the world, a new scion engrafted on the old stem of humanity, bringing with it new and ennobling saps.

It has been said that the Jews had such respect for their new-born children, from the fact that they were always expecting the birth of the Messias; and I think that every child ought, to a certain degree, to be looked upon as a Messias; for the great work of ameliorating the world in which we are, all of us (consciously or unconsciously) engaged, and which the shortness of our life-time (and other shortcomings besides) does not permit us fully to carry out, *they* are to take it up after us.

In this course of anthropology the young should be impressed with the great Christian idea of the solidarity of mankind; how men and women constitute, so to say, right and left of the great body of humanity; how they are created not to debase and degrade each other, but that *one man* and *one woman* may form a bond of mutual friendship and help, more tender and close than any other bond on earth; that they have each their faults, most of them in common and some peculiar; that it would be a work pleasing to God that they should try and get rid of these faults as much as possible before marrying, and also continue to battle against them after marriage;



and that when they find faults in each other, they should try in love and charity to help each other to overcome them, or bear in patience what they cannot alter; and how they should tell each other their own faults and pray for each other—as Christ Himself urges us to do, saying through His apostle, “Confess your faults one to another, and pray for one another.”

I have already suggested the necessity of teaching young men and young women how to take care of their own bodies, before they are left to their own discretion, and before they have other human beings confided to their discretion.

They should be taught that a spiritual life sanctifies and ennobles the body, but also that there are physical means that can assist in this work.

If anything, I think that it is even more urgent to give young girls instruction in the science and art of physical education, as it is to their hands, as mothers or nurses, that the tender infant is confided, and it is from them the child receives its earliest physical, as well as moral and intellectual, training; and there is no doubt that the way in which this is done in infancy has the greatest influence on the child's future life. It would, therefore, be quite a rational thing, to show young girls how little infants should be treated from the moment of their birth, this not only theoretically, but practically as well. Each Girl's school (at least each training college, to begin with) ought to have affiliated with it a model-nursery, where a certain number of poor children could be received, and where the young girl could learn their treatment practically. She would there learn what is good for the child, as to food, clothing, activity, rest, the proper care of its skin and other organs.

She would there have the opportunity of watching its different stages of development, and the modifications in its treatment and *régime* in consequence thereof.

She would have the opportunity to see how, by play and judicious exercise of its faculties, it gradually, and within a comparatively short time, developes into a reasoning being.

She has learnt, in the physiological part of her course in anthropology, about the organs of the body and their functions, therefore she will easily understand the reasons for the treatment adopted, and is never likely to forget what she has learnt in this manner. Even if she were never to become a mother herself, she will in all probability come into some position where her knowledge of child-nature, and its rational treatment, will prove useful. You know that all women, whether learned or unlearned, whether wise or foolish, are wonderfully inclined to give advice in these matters; and would it not be a happy thing if they had the knowledge that would enable them to give *good advice* instead of bad? \*

I am now coming to the physical side of education, and its relation to the educational work as a whole.

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\* About six years ago, I first mentioned this idea in an assembly of friends, among whom was an elderly lady who, by way of opposition, made the remark:—"I have reared eight children without having had any previous training in the management of children."—For my part, I had not the heart to ask her how many of those children had reached mature age, as I remembered to have seen her frequently in mourning; but I asked one of her more intimate friends, and learned that only two of them were still alive.—Not all mothers, however, are as satisfied with themselves as this lady was. More than one has told me weeping: "I am sure I killed my first-born, from vanity and ignorance, by dressing him more with a view to show off his prettiness than to keep his little body warm."

As regards this relationship, we find learned men with very different views.

On the one hand, we have men such as Dr. Caldwell and George Combe who assert that the nature of all education, moral and intellectual, as well as physical, is purely physiological, and that every change it produces in those who are the subjects of it is strictly physiological; "it consists in an improvement in the organised matter, rendering such matter a better piece of machinery for mind to work with."

On the other hand, we have Dr. Bain, for instance, who declares in his work "Education as a Science," that there is not such a thing as physical education. "The art of education," he goes on to say, "assumes a certain average of physical health, and does not inquire into the means of keeping up or increasing that average."

No doubt, I say, the practice is such; but the question is, whether it is right that it *should* be so. It seems to have escaped this excellent author that if we were to extend this mode of reasoning to the other provinces of education—intellectual education, for instance—it would sound like this: the educator can assume that each human individual is possessed of a certain average of memory, understanding and judgment, and he need not inquire into the means of keeping up or increasing that average.

This would be equal to saying, there is no science or art of education wanted!

Let us bear in mind, that the mere fact that a thing is so, or so, is not a proof that it would not be far better if it were otherwise; or why should reforms ever be needed?

Now, though it may be going too far to say, with Dr. Caldwell and Mr. Combe that all education is

purely physiological, and consists only in the improvement of the bodily organs for the action of the mind, it should not be forgotten that the action of the mind in great measure depends on the state and quality of these very organs.

That there are exceptional moments when the mind, so to say, triumphs over physical debility, and also exceptional individuals where this is permanently the case, is undeniable; but this is the exception to the rule, and should not be taken into account when making up a normal plan for education.

Otherwise one might just as well say, there are some individuals who have turned out good men though having had the worst kind of education, therefore never mind what education or examples you give a child.

I think no one denies that there is a physical basis for all education, so that what we call intellectual education in reality aims at the improvement of the brain, especially through the two great channels of information, the eye and the ear. But if it can be proved that by systematic and simultaneous training of the organs of movement (that is, of nine-tenths of the bulk of the body), you would effect a much greater improvement in the condition of the brain, than by working on this organ exclusively through the eyes and the ears—what then?—should we not assign to such a system of training a high scientific and educational value?

It seems rather anomalous to exclude from a scientific treatise on education just the part of this activity to which we can assign the most *exact* scientific basis; and the proof that *this* is the case with physical education will, I trust, be forthcoming by a closer investigation of the subject.

First, it will be necessary to distinguish between physical education in its general, most comprehensive sense, and physical education in its proper, more limited sense.

Physical education in its widest sense embraces a judicious application to the child of all the necessities of life, such as food, drink, clothing, warmth, pure air, light, personal care as to cleanliness and attitude, the due proportions between work, rest, and pleasure, between mental work and muscular exercise, and, in some measure, the question of rewards and punishments (for these have their physical, as well as their moral aspect).

Physical education in its restricted, proper sense implies a judicious application of a rational system of muscular exercises.

Considering the reciprocal action of the mind on the body, and the body on the mind, the educator should know how to use all these things in such a manner that they may help him in his work.

But this presupposes in the educator that biological knowledge of man and things concerning his development which should form part of the thorough study of anthropology that I alluded to in the beginning of my lecture, or sad mistakes may occur.

Mr. Combe tells us a curious instance of mistaken notions of this kind. On his travels in America, he came to an asylum for orphans, where the managers had been feeding the children exclusively on vegetable diet, in order to improve their morals.\* The Doctor

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\* They had probably heard that animal diet tends to strengthen the passions in man, but they forgot to take into account the difference between sanguine young men and half-starved little children.



having found the children very dull, and suffering from scrofula and general debility of the system, had advised the teacher to adopt a more generous diet. This advice was followed, and a general and decided improvement in the children was the consequence.

Until quite lately teachers and educators in general seem to have known very little of the secret of influencing the action of the brain, except by means that may be brought under the head of corporal punishment. The pain inflicted by the cane or the rod was looked upon as a most effective stimulant to a dull brain; and it may have been so in some cases, but at what horrible cost!—often perverting moral feeling in the offender, and also in the person inflicting the punishment; in the former, because the punishment often was inflicted for offences not committed purposely; in the latter, on account of there being in the system itself a temptation to give, in violence and blows, a vent to the torments of his own bad humour.

Though pain may have its legitimate place in the development of human nature, and a prompt and severe chastisement may, in some cases, have a beneficial influence as a moral corrective, helping the child to repress an evil suggestion and bring forth a quick reaction in his feelings, these cases are comparatively few, and there is something revolting in the thought that so much unnecessary torture should have been inflicted upon such frail beings as children, whose sense of physical pain is so much greater than in the adult. (I am not quite sure if there are not, even to this day, some public educational establishments in this country, where they still act upon the old scholastic maxim: "Much flogging and little to eat is good for boys.")

It should be remembered that a good supply of



healthy, well-oxidized blood is the best stimulus to the brain.

Dulness in children often depends on want of oxygen in the blood (with poor children sometimes on direct want of appropriate food).

If the air in the room is not kept pure, then the venous, dark blood does not undergo the necessary changes in the lungs, but is sent back in that condition to all parts of the body, and, of course, also to the brain, which, in consequence, is not sufficiently nourished and stimulated to be able to work.

Sometimes it also happens that the teacher demands a too prolonged attention—more than ordinary children are capable of—or that he expects them to understand things for which they have not been duly prepared.

Now, somebody may say, but surely this foresight, this physical care of the children, is the business of the *home*, not of the school. This is *half a truth*, and therefore apt to mislead.

It is not too much to expect that the schools should take the initiative in all educational reforms, being able, as they are, to keep closer to the educational ideal, as they are supposed to concentrate their activity more exclusively on educational matters.

Then we should not forget that there are evils almost inseparable from school-life, and from the disproportionate demands that civilisation, or the spirit of the time, through the agency of the school, makes on the child's brain-power; therefore, it is but right that the school should make sure at starting that every possible corrective is taken up in the curriculum and honestly made use of; whereas before the child begins school the duty of physical, as well as mental, education falls entirely on the home.

Systematic physical education ought, in fact, to begin with the child's first day of existence. This simply means that the physical care and training given to the child should be based on real knowledge of what is good for the little being, and not consist in a blind following of traditions of doubtful value.

Now, it would seem that an infant should not want anything like systematic muscular exercise. It is true that a happy instinct teaches it to move its little limbs in all directions—motion being a condition for its healthy development; but the mother, the nurse, ought to understand how to arrange so as to give full scope to this craving for activity. She should encourage, and watch over, and in some measure conduct, the movements; this would not be an undue encroachment on nature, not more so than the mother's educating and guarding the child in other respects.

The dress of the infant should be as loose as is consistent with warmth, so as to allow ample room for motion.

The infant should not be carried, or be made to sit, for any length of time, or, in fact, be kept too long in the same position. Several times a day it should be stripped and laid on a couch (with due precautions against chill), and it should then be encouraged to kick and move to its heart's content. An infant that is dull and sickly can be excited to movements by the coaxing voice of the mother or nurse, and by her placing her hands against the soles of its feet and the palms of its hands, thus offering a slight resistance to the motions.

This has a peculiarly modifying and strengthening effect on the muscles and on the *innervation*.

Mind, I don't mean to say but that *instinct* may be

a reliable guide for human beings in a primitive state in rearing and treating their children in a way which will make them suited to that kind of state; but, in a civilised community, instinct is blunted, and reason is the only reliable guide.

Civilisation, however great its blessings may be, undoubtedly renders the following of quite natural habits nearly impossible, and more especially so for women. But the bad effects that this constraint in the long run brings about, may be counteracted and removed by means of the foresight that one has a right to expect from reasonable beings.

As I treat education as a rational whole, I suppose it to depend on *one* supreme will.

During school-age, I think this *will* should be the head of the school, qualified in the way I have already suggested, and invested with full parental power.

Where the parents have themselves the educational insight that should be found in a tutor or the head of a school, they could, according to my opinion, with advantage keep their children at home, and plan a rational system of education of their own, and then make use of special teachers only to supplement their own efforts.

But if they confide their children to a school, they should do so with complete confidence in the head of the institution—after having first ascertained, of course, that he or she is worthy of their confidence.

Surely nothing can excel the influence of a good *home* on a child, and it is to be hoped that if the standard of the schools be raised so as to make their aim the ideal of a healthy and harmonious development of the human faculties, and if the educational means be chosen in strict accordance with the aim, this will raise the standard of the new generation

physically, intellectually and morally, and thereby raise the educational power in that generation higher than ours.

Now, I want again to emphasise the fact that external hygienic means can, in great measure, contribute to this result, and ought, therefore, to be taken seriously into account by educators and people in general who take upon themselves to manage school-business.

The whole school should be so arranged as to locality, furniture, and distribution of work, that there may not, through the fault of the school, be done any serious injury to the children's *physique*.

If the time allowed, there could be a good deal said on the qualities and position of the school-building itself; how it should be raised on dry and well-drained ground, and so situated that light and air may have access to the building from all sides—for the little human beings need the bright sunshine from heaven for their healthy development just as much as growing plants do. A school-building should have its own style as regards the arrangement of the windows, and not depend on the whim of fashion.

Shortly stated, the windows should be so arranged (and the desks correspondingly), as to let in full light on the *left* hand of the pupils, or from above if the former is impossible; or else their eyes are in danger of being injured. I have observed that this fact is wonderfully overlooked in this country, at all events in the London schools.

Then there are the important questions of heating and ventilation to be taken into consideration.

All of us know how necessary the oxygen of the air is to the vital functions of the body.

Now, we can, on good grounds, assume that an

average child breathes about 1,300 times in an hour, and that, in each breath, it takes in about fifteen cubic inches of air, not to count the slight but constant and important breathing that takes place through the whole integument of its body. From this fact we can easily understand how important it is that the cubic space and the ventilation of the class-room should stand in due proportion to the number of children accommodated therein.\*

Some of the fundamental principles for a good system of ventilation are : that there should be openings for the egress of the vitiated air from the room, as well as for the entrance of the external air, and that the ventilators that let in the external air should be placed high up, and have their openings turned obliquely upwards, so as to force the cold air first in an upward direction ; when, after that, owing to its heaviness, it takes the downward direction it spreads its volume, and is not felt as draught by those who are in the room.

For we should not let our eagerness for an efficient ventilation blind us to the fact that continuous draught indoors is an evil that greatly endangers health.

It seems, therefore, that it would be a good plan to ensure by ventilation an abundant supply of pure air for an hour's stay in the class, and let the children leave the room for five or ten minutes at the end of every lesson, and have a run down in the playground, whilst doors and windows are being opened so as to ensure a moment's sweeping wind through the class-rooms. This would thoroughly renew the air and put

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\* Professor Pettenkofer, of Munich, who has investigated this subject very closely, demands 540 cubic feet of well ventilated space for each child.



it in motion, and make it doubly wholesome ; for, as it has been said, “ stagnation tends to injure air, just as well as water.”

Such an arrangement would also have the inestimable advantage of giving rest to the children’s brains, and send them comparatively fresh to a new lesson.

Among the things that most seriously interfere with the healthy development of a growing child, are the bad attitudes during work, which it is allowed, or forced, to assume day after day. It is especially the attitude during writing that should be carefully considered, as the hours of writing exacted from school-children amount to something like from one to two thousand in the year. Even deducting the bad writing positions, it is almost a sin to exact such an amount of writing from a growing child, but here again we meet the iron hand of the examinations ; for as the examinations in this country, as well as in France, mostly consist in answering questions by writing, the children must be well prepared beforehand to do this by writing, and writing, and writing.

The direct consequence of this much writing, in seven cases out of ten—at least, among the girls—is a more or less misshaped body, accompanied with more or less serious internal complaints. (You know it was the much writing that caused Fénelon’s interesting pupil, the Duc de Bourgogne, to be deformed, and the same cause has the same effect on a wider scale now-a-days.)

One of the worst writing positions that I ever saw, was in schools under the London School Board. The left arm was placed on the desk above the copy-book or slate, the trunk twisted and bent to the left, the left side of the chest and abdomen pressing with full



weight against the desk. To any one having some physiological knowledge, it must occur at once that such a position must tend to throw the muscles of the trunk out of equilibrium, and misshape the bony frame-work of this part of the body, and moreover impair the vital functions of respiration, circulation and digestion.

When remonstrating with the teachers against this barbarity, I got the astonishing answer, that this position was enjoined by the *Government Inspector*, "*in order to prevent the children copying from each other.*"

It would carry me too far to describe all the writing positions, more or less bad, that are in use, but I shall in a few words describe what constitutes a normal writing position—one that any physiologist would approve of.

Both arms rest evenly and lightly on the desk, nearly up to the elbows (the copy-book having to be pushed up while the writing proceeds), the trunk is kept straight, and so near the margin of the desk that the clothes slightly touch it, but the chest must not rest against the desk; the transverse axis of the trunk should be parallel with the edge of the desk, and there should be no twisting to either side; the soles of the feet rest fully on the floor, or on a straight foot-board; the heels are kept together, the toes, as well as the knees, pointing outwards; the legs bent so as to form right angles in the hip-joints and in the knee-joints.

But I may as well say at once that it is a *physical impossibility* for a child to keep this position during writing, unless there be certain proportions observed between the desk and the seat, and between these and the child's body.

The *height of the seat* from the floor, or the foot-board, should be equal to the length of the child's leg from the heel up to under the knee-joint. By "anthropometric" measurement this has been found to form on an average two-sevenths of the whole length of the body. The *width* of the seat from the front edge to the back should be equal to the length of the upper leg counted from the inner angle of the bent knee, so as to allow that part of the body to rest throughout its length on the seat, and thus give a large basis of support to the body, thereby greatly alleviating the strain on the muscles that keep the back in equilibrium. Measurement has laid down this length as being one-fifth of the whole length of the body. Then there is the important proportion of the *difference in height* between the seat and the desk. It should be such, that when the child is seated perfectly straight with hanging arms, and quite close to the desk, then the upper edge of the desk should reach just up to the elbows. This normal difference between seat and desk has been found to correspond to one-eighth of the whole length of the body, but owing to some difference in proportions between boys and girls of the same size, it has been found advisable to add about an inch to this measure, when wishing to have the right proportions for girls. Finally, there is the not less important question of the *distance* between the opposed edges of the desk and the seat. It has been found, that where the seat does not reach forward so as to come under a vertical line from the edge of the desk, such school furniture is unfit for writing purposes, if you want the children to preserve the right attitude. It will even prove advantageous if the desk overlaps the edge of the seat by one inch.

To render the desks convenient for other purposes than writing, the desk-plate can be made to push forwards and backwards, or with a flap that can be turned up on hinges. The desk-plate should have a slope of  $20^{\circ}$ , to permit the axis of vision to fall on the paper at a convenient angle. For mechanical reasons it is undesirable to have a greater slope for writing, but for reading, the desk should admit of an arrangement that would hold the book at the inclination that is most favourable to vision, namely  $40^{\circ}$  to the horizontal plane. (A book support, constructed so as to be folded down when not used, or part of the flap turned up on hinges, could provide for this.)

This arrangement would permit the child, when sitting perfectly straight, with his back against the support of the seat, to have the book at a distance of 10 to 12 inches from his eyes, which is considered the normal range of vision. Whether the back-support of the seat is high or low does not signify much, but to be of real use it must have a convexity forwards corresponding to the lumbar region of the child's back. The edges that come in contact with the body should be rounded off, as sharp edges, in pressing the flesh, impede the circulation of the blood in the veins.

The seats and desks for a class-room being thus made with regard to the dimensions of a child of *normal* size for the age corresponding to the class, they will do very well for the great majority; but there are nearly always in a class a few individuals who are considerably above or below the normal, or average size. For their benefit there ought to be a few desks of corresponding dimensions placed in the class-room besides the normal ones.

Such an arrangement would greatly contribute to counteract the increasing tendency to curvatures of

the spine, to short-sightedness and other eye-complaints among growing young people.

In all matters contributing to a healthy development of the child there ought, of course, to be a continual co-operation between school and home ; but the school should take the initiative, and then, when there has come a new generation of fathers and mothers who have learnt more of the laws of health, as well as of the art of education, than the present one, then the schools may expect more help in their work from the homes than now.

There is one department in which, though it undoubtedly belongs to the home, I think the schools ought to have a decided veto : I mean the dress of the children.

I do not think there would be any very serious objections to make against the boys' dress during their school-age, but so much the more against the dress of the girls. Their dress is often such that it interferes with their sound development, and tends to make them ailing, irritable and stupid, and more or less unfit for fulfilling their duties in life.

I cannot now enter into all the details of the question. It will be sufficient to remind you of such facts as that there are a great number of girls whose dresses are cut in such a way that they cannot, without a tremendous effort and consequent strain on internal organs, stretch their arms above their heads or take a full-length step ; and that nearly all mothers in this country put stays on their girls, from the age of ten upwards, some of them from the false notion that this will improve their deportment and figure ; others, from a traditional idea that girls are born to wear stays.

The girls, as they grow up, are generally anxious to

get the stays tighter and tighter round the waist, partly with a view to improving their appearance, partly from a sensation of muscular weakness which makes them feel as if they could not keep themselves upright without the support of the stays. The latter is a sad truth; for, what with the pressure of the stays, waistbands and other tight clothing on the muscles that have to keep the spine straight and in equilibrium; and what with these muscles being put on the stretch for hours and hours together of sitting, these muscles waste and sometimes undergo a fatty degeneration.

By these co-operating circumstances—a faulty dress and too much sitting—the beautiful equilibrium of the muscles on either side of the spine is destroyed, and the immense majority of *curvatures of the spine* in girls between ten and fifteen are brought about.

It would be a good thing if it were a more generally known fact that nothing but intermittent exercise of the muscles can give them strength to do their work of keeping the spine straight. If people would try to bandage up their arm and not use its muscles for a couple of months, this experiment would soon convince them of the deteriorating effect that constant pressure and inactivity have on the muscles, and they would get an idea of the injurious influence of stays and other orthœpedic contrivances when applied to the trunk.

Besides their effect of weakening the muscles and distorting the spine and the ribs, the stays, with their stiff busk in front, tend, in the long run, to displace the abdominal organs. They seriously impede respiration, by not allowing the lower part of the chest to expand to its full width; and also the circulation of the blood, more especially in the abdominal organs,



so that many cases of tumours can be traced to this cause, as well as cases of heart and lung disease.

The constant pressure and almost complete annihilation of abdominal respiration checks the peristaltic movements of the stomach and the intestines, and thus impairs digestion as well as the other vital functions. Add to this a red nose, impure complexion, and peevish humour as being very often the consequences of tight lacing.

Then there are the fashionable boots with pointed toes and high heels that so many girls (even servant girls) wear. Even if these boots are not too tight (which they often are), their very form throws the foot out of its natural shape, and this means lesion to ligaments, muscles, vessels and nerves. The pointed boot, in turning the great toe outwards, forces its joint with the first metatarsal bone to form that ugly projection which, in later years, becomes a seat of predilection for rheumatic and nervous pains to settle in.

So great is the sympathy between all parts of the body that many cases of dyspepsia, neuralgia and head-ache, and even apoplectic fits, have been traced back to pinching or uncomfortable boots !

Now, as their unsuitable clothing seriously interferes not only with the general healthy development of girls, but also with their school-work, the schools, when they have done their duty as to good hygienic arrangements and a due alternation of mental work, physical exercise and perfect rest, should lay down the rule (by common accord) that no girl would be admitted who is not dressed in a simple and suitable manner, so that she can without difficulty perform all movements natural to her frame.

How the girls are dressed at home or on festive



occasions would, of course, be no matter for the school to inquire into.

I hope no one will misunderstand my urging a more natural and suitable dress for girls, as if I wanted women to be dressed *exactly* like men; such a change I should not approve of, especially not for grown-up girls.

I think it is, upon the whole, a natural and true instinct that drives women to dress differently from men, and to seek, more or less unconsciously, in the beautiful colour and form of their clothes, a compensation for the innate beauty that the clothes conceal; and I, for one, do not believe in the possibility of any lasting reform in female dress that does not take into account woman's craving for beauty.

There is nothing undue in this desire for beauty, but in a reasonable being, in a Christian woman, it should be subordinated to interests of a higher order.

A beautiful human being is perhaps the most beautiful of all the beautiful things God has created on earth. But then it should be *real* beauty: a noble and graceful form, healthy, sweet-coloured skin, a soul-filled expression that thrills your heart with an emotion like that you experience when hearing a beautiful song.

Such beauty is the outcome of health and harmony in the different parts of the organism.

Unhappily most people are satisfied with an artificial, conventional kind of beauty, and thus neglect, or even destroy, real beauty in trying to obtain its counterfeit.

It would be well also in this respect to keep the physiological ideal of a human being before the minds of young people; at present they seem to form their ideal of a well-shaped woman after the fashion-plates and the mannikins in the shop windows.

I think it would be a good thing if in every girl's school there were a copy of the well-known illustration representing, on the one hand, the well-shaped framework of the chest within the soft, undulating outlines of an antique Venus; and, on the other hand, the corresponding parts of a woman deformed by tight lacing. Perhaps it would be even more radical to have these illustrations in the boy's schools also, for I greatly suspect that it is in men that the notion of beauty has first gone wrong, and then again influenced women's taste. If the Chinese gentlemen were not such admirers of unnaturally small feet, and a languid suffering expression in women, their little ladies would never think of compressing their own and their daughters' feet as they do.

An illustration representing the human foot as God made it, and another as the shoemaker has made it, would form another desirable addition to the object-lesson materials in schools.

Many people may consider the things I have now been treating of, as mere trifles, not worth a serious thought; but nothing that tends to make women less good, less intelligent, less healthy, less useful, should be looked upon as trifles. It will be a great gain for humanity when women get their eyes open to all things which tend to improve our nature, physically as well as mentally. The more they advance in sound knowledge, goodness and love of truth, the greater will be the advance of humanity as a whole. As long as the moral and physical power in woman is kept up, there is some hope for the future of a country. For is not her silent influence, for good and for evil, one of the great motor powers of the world?

This has been well expressed by your own poet, Tennyson, in these words:—

“ For woman's cause is man's ; they rise or sink  
Together, dwarfed or godlike, bond or free ;  
For she that out of Lethe scales with man  
The shining steps of Nature, shares with man  
His nights, his days, moves with him to one goal,  
Stays all the fair young planets in her hands—  
If she be small, slight-statured, miserable,  
How shall men grow? ”

As regards woman's influence on man—apart from what she may be to her own self—there are, and have always been, two kinds of women : those that help him to attain the ideal, and those that drag him away from it; and I think that a thoroughly sound and rational and harmonious education will increase the number of the former.

Now supposing that the external hygienic arrangements both in the school and the home are all that can be desired, there are still those exigences of civilisation which even in childhood begin to exert a pressure on the immature frame of the child by over-much sitting, over-much use of the eyes, which things, in many children, especially where there is inherited constitutional weakness, tend to interfere with their healthy development. Besides, there is the fact of the mental strain which can be turned to good account in their development only if kept within proper limits, and if duly counterbalanced by exercises that can relieve the brain, by leading the nervous action in another direction.

There must be taken up honestly in the curriculum an adequate amount of systematic physical exercise, in order to aid the unfolding process of the growing child, and thus bring him to the perfection that his nature is capable of.

In a word, rational gymnastics—that is, physical education in its limited, proper, most scientific sense

—should form an *integral* part of the school-programme; it would not answer merely to try and squeeze it into a time-table that is already overcrowded.

In physical education, as well as in education in general, the procedure should be *rational*: the means should be chosen in accordance with the aim, and stand in proper relation to the structure and laws of action of the human organism itself. For whatever in education transgresses these laws is *irrational*.

Now there exists in the world one system of gymnastics to which scientific men have given the epithet *rational*, since it is based on rational and scientific principles, its founder never adopting a Movement of which he could not demonstrate the physiological effects.

The founder of this system, *Peter Henry Ling*, born in the same province of Sweden as Linnæus, was a distinguished poet, philosopher and physiologist.

It may perhaps interest you to hear something of its leading principles, though I, of course, have not the presumption to think that I shall be able in the course of a lecture to make any one fully understand a subject that is an art as well as a science, and whose theoretical premisses, like those of other sciences, require considerable study to master, besides practice as the necessary application of the theory.

Ling's system of Rational Gymnastics has four divisions: I. *Pedagogical or Educational Gymnastics*—that is, a graduated system of exercises so arranged as to produce a harmonious development of the human organism; this harmonious development being, on the one hand, *health*, or equilibrium between the several organs; and, on the other, *power*, coupled with grace, or the perfect control of the will over the so-called voluntary muscles.

II. *Military Gymnastics*—the art of fencing and manœuvring the different arms, and so on. It is based on educational gymnastics.

III. *Medical Gymnastics*—that is, the art of restoring a diseased body to health by means of appropriate movements.

IV. *Æsthetic Gymnastics*—where beauty of form in the movements, and the adequate bodily expression of mental states, are especially aimed at. It is closely related to the fine arts, and therefore studied by artists and actors. It is always based on educational gymnastics.

Some of the leading principles of rational *educational* gymnastics are : All parts of the body should have their proportionate share of exercise. Gymnastics should be *all-sided*, so as to ensure a harmonious development, and counteract the tendency to *one-sidedness* that generally accompanies our daily occupations. (You know, perhaps, that this one-sided development is upon the increase in our race, from the fact of generation after generation having used their right hand almost exclusively ; therefore, the left hand should be used along with the right.) Rational gymnastics is, consequently, opposed to the exclusive practice of certain feats for competition and public admiration, as excess of strength in one part of the body generally carries with it weakness in other organs, as is often seen in athletes.

But we should not, therefore, strive to perform all *possible* movements, for only movements that are well defined as to form and rhythm—and, having their foundation in the organism itself, respond to its wants—have a really educating influence ; and of such movements there is no want, there are many hundreds of them.



Special attention should be paid to the development of the organs of respiration, and one should avoid such movements and positions as do not allow of full breathing.

The pupils should not be allowed to begin with very complicated or vigorous movements, as such tasks tend to blunt their sense of form, and even to injure the weaker among them; they should be gradually brought to such a task. By first practising the simple elements of which a complex movement is made up, even comparatively weak and dull children can be brought to perform such movements, not only with safety and benefit to their health, but also with the accuracy and beauty in the form, at which all movements for educational purposes should aim.

The simplest, typical movements are, as a rule, those that have the greatest corrective effect—they are called typical as they are the purest expression of the sphere of movements particular to each joint—they are, therefore, not to be laid altogether aside in the more advanced stage of physical training, and the more complex movements are always to be graduated and estimated in reference to these.

Such a methodical proceeding develops in a wonderful manner the so-called muscular sense, by means of which we can judge beforehand to what we can do with safety in the way of muscular exertion of any kind.

It also increases the influence of our will on the muscles, so that they can be brought into prompt and accurate action at the instant of volition; nay, such Movements even tend to strengthen the faculty of volition itself. (What a mighty ally in the work of education in general!)

Each Movement should be well defined beforehand as to form and rhythm.



This it is which, together with the intensity, or *fulness of mental energy* in the execution—if I may so express myself—constitutes the profound difference between a movement for educational purposes, and an ordinary movement.

Each well-defined Movement has three distinct moments :

(1.) The attitude from which the movement starts, or what is called the commencing position;

(2.) the intermediate point, or points, through which it passes ;

(3.) the final point in which the movement ceases.\*

Something characteristic of Ling's system is the way in which it makes itself, as far as possible, independent of external objects, by having recourse to the resources of the body itself. Therefore a considerable part of the system consists of so called Free Exercises *i.e.*, without any apparatus.

These exercises are so well defined in their form, that for their description geometrical angles and lines are used. They can be performed by a great many pupils, arranged in straight lines, and therefore easy to survey.

They tend greatly to sharpen the sense of form and time in the pupils, and to produce a noble bearing. Some of them can be performed with singing, but the musical element should not be allowed to take such proportions that it tends to divert the attention from the correctness of the movements.

Ling is by no means adverse to the use of gymnastic apparatus ; on the contrary, his system

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\* Practical details for the exercises will be given in my projected work, to which I have already referred in the note on page 21.

contains graduated exercises *with* apparatus as well as without ; but he assigns to the gymnastic apparatus only a secondary place.

To use his own words :—"The apparatus does not indicate what movements and positions are useful or injurious to healthy or ailing people."

The real value of fixed apparatus is to serve to support and fix certain points of the body, so as to bring about modifications in the movements, either by strengthening the action of the muscles concerned, or allowing a useful change either in the starting, or final position of the movement, which the law of gravity otherwise would render impossible. And we should bear in mind that the effect of a movement is greatly influenced by a change in the starting position, the centre of gravity in the body being displaced, and the angles of the joints, as well as those that the soft parts of the body form with each other during a movement, often considerably altered thereby.

Therefore the movements in Ling's system are never arranged according to apparatus, but solely according to their *physiological* effects. This not only as regards the muscles ; for these are *ultimately*, as well as the bones, to be looked upon as mechanical vehicles, by means of which the vessels and nerves in them can be acted upon, and thus also central parts influenced.

If no apparatus can be had, a good teacher of this system will know how to make ordinary furniture, and the very walls in the room, serve as support for the exercises. Ling even showed how pupils, not too young, could be made to give each other alternate support for certain movements ; and several of these exercises with mutual support—*Duplicated Exercises*,

as they are also called—are some of the most beautiful and characteristic of the system.

Of the graduated and varied series of *Leg-movements*, *Arm-movements*, *Head-movements* and *Trunk-movements* that this system has developed, tables are made up to serve as guide for the respective lessons.

The order of the movements is taken according to different physiological effects. Their influence on the action of the heart, and on respiration is taken into consideration; some movements are used to isolate certain muscles, or groups of muscles, others to call forth an extensive co-operation of muscles.

Knowing the effects of the movements, care is taken not to let several movements that have the same effect follow each other. Thus, for instance, after an exercise that has greatly increased the action of the heart, one that has a calming, relieving effect on the heart is taken up, such as toe-walking or a quiet leg-movement. For it has been ascertained experimentally that such movements diminish the beat of the heart more than immediate rest would do.

Another leading principle in making up the tables of exercises, is to let the movements increase in strength till the latter part of the lesson, and then finish off with one or two of a gentler description, the last one generally being a so-called respiratory move-

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\* At the meeting at the Beethoven Street Board School, in July, 1881, where children, brought together from different Board Schools (some of them poor ragged children from Drury Lane), performed Swedish exercises under my direction—and which meeting H.R.H. the Princess Louise honoured by her presence—it was noticeable that the audience, whilst highly appreciating the concurrent precision and the perfect harmony of all the movements, seemed the most struck by these very *mutual support-movements*.

ment, that is, an arm-movement inducing deep respiration.

Ling's system admits of different treatment for different ages and different stages of strength and development. For quite young children such exercises are chosen as, besides being easy to perform, are very brisk and lively in rhythm. Even the slow movements, such as trunk-bendings, for instance, are not performed so very slowly by them, as should be the rule later on. Short lessons, with a good deal of variation, is a general rule for this age.

Before the real school-age, when little boys and girls are being educated side by side under the motherly care of a woman, they should of course have their physical exercises in common, as they have all the rest of their work.

Many of the exercises with singing, and different games taken up in the Kindergarten curriculum, can be very well arranged so as to produce a good physical development *for that age*; but the teacher should know how to arrange them so that all parts of the body get their due share of exercise (which is not always the case); and the little children should not be crowded together so as not to allow room for their movements. In many infant-schools, supposed to be conducted on the Kindergarten principles, I have seen the children constantly striking and pushing each other for want of space when having to imitate the arm-movements of the teacher, who went on as if this striking-business were quite in the order of things!

When the age comes that the boys and girls are separated, then I do not think there is *one* subject in which it is more desirable that the teacher of the boys should be a man, and the teacher of the girls a woman.

This need not hinder the little girls from having the same exercises as the boys, provided the exercises be rational; and if they are not rational, why should the boys have them?

If led by a woman, the same exercises will almost unconsciously assume a slightly modified character, so as to suit the girls exactly.

However, I think that about twelve years of age there are some reasons—even more psychical in their nature than physical—for beginning to introduce divergent elements into the exercises for boys and girls. In those of the boys, a military element, and in those of the girls, a more æsthetic element, so that the obtuse angle and the soft, undulating line begin to play a greater part in the Movements.

Still, a wise teacher would never *tell* the girls to perform movements in a *graceful* manner. Grace is the natural outcome of a correct performance of such movements. Of course these exercises should be varied by brisk and lively ones, such as leaping and running.

The rational aim should never be lost sight of. For the girls as well as for the boys it is the needs of their organism that should first be consulted; it is only when we have different forms of equal physiological value to choose between that we are entitled to give preference to those that are more pleasing to the eye.

Unhappily, where a rational system is not followed, the tendency is to exclude from girl's exercises many that are quite essential for their sound development as they call muscles into action that in most girls do not get sufficient exercise in daily life. \*

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\* Many a young mother has had to pay with her life for neglect in this respect by her educators, during the time of her development.



There are no urgent physiological reasons for making the exercises of the girls essentially different from those of the boys, if these are what they *should* be.

In the Primary schools in Sweden their exercises are very much the same, and in the country schools where boys and girls often are taught together, they are sometimes also exercised together. The girls have, as a rule, less of arm-hanging movements than the boys, and of a milder kind.

Neither boys nor girls are allowed with us to go on performing dozens of movements on parallel-bars, as this greatly tends to impair their whole bearing, by pushing up the shoulders and rounding the back. Nay, I can say that the parallel bar is entirely excluded from our gymnasia.

If the gymnastic exercises are to have all the educative influence that we justly may expect from them, the time allowed should bear proportion to the work that is to be done. An hour a day of gymnastics forms a rational proportion, and never less than half an hour a day should be taken up in a rational system of education, where, as you know, *proportion* is a *conditio sine qua non*. And this time should not be taken from the play-time; for growing children want both systematic exercise and play.

In Sweden the gymnastic teachers generally set aside one part of the lesson for teaching the children games; they then only see that the children observe the rules of the game, and—setting aside the discipline that reigns during the exercises—permit, or encourage them to make as much noise as they please.

I have already before alluded to the great educative influence of games, and they certainly should form—together with swimming, rowing, dancing and



similar exercises, where such can be had—a valuable part in physieal education.

But these activities do not, as a rule, possess as high a corrective and educative value as rationally systematized exercises, especially as many of them are very *one-sided* in their effects, the more so as young people are apt to do too much of what they particularly delight in.

Some of these games and exercises are, moreover, so violent that young children ought not to take part in them till they have had a certain amount of training, so as to permit them to do it with safety. Football, for instance.

However, in boys' schools in this country, the principle that physieal development should go alongside with mental culture seems to be acknowledged, though the system—if there be a system—seems to leave the weaker ones to their fate.

But, surely, the sound development of the girls is not less important than that of the boys; and this seems to be left almost entirely to chance in the girls' schools in this country.

There are many girls' schools where the children have no kind of exercise whatever, not even time for play. I have proposed to the London School Board that in those schools where the teachers have gone through the elementary course (theoretical and practical) of physieal education, that I have been called upon to give them, they should give, at least, three half-hours a week to exercises—which is the least amount with which one can expect some kind of result; but even this seems next to impossible under the present system of payment for results in the examinations.

Once a rational system of gymnastics adopted, and

a proportionate amount of time set aside for the purpose, there can be various arrangements as regards the pupils. The best arrangement is to have the children divided into sections corresponding to their age, strength, and skill in exercises.

To let them exercise according to the class-division of the school is not so good, though often more convenient. In such case the exercises must be chosen so as to suit the weaker children.

If very great space is available, sections not exceeding twenty in each can be exercised simultaneously by monitors, under the supervision of the teacher. The monitors then form the highest section exercised separately by the teacher. Several times during the lesson the teacher gives a signal so as to bring all the sections together, for the performance of certain movements. When the children once know the movements, 400 or 500 can be made to perform them with great accuracy under one teacher, but when new movements are being taught, it is always best to do this by smaller sections.

In Sweden this division in sections with monitors is the most usual way of instruction in the public schools; but I prefer not to use it for girls on account of the much shouting—though, on the other hand, girls have proved themselves very good monitors indeed.

It is good if the exercises, or part of the exercises, can be performed out of doors in fine weather, or else they should be performed in a large, light, and well-ventilated and dust-free room.

A good teacher and good floor-space—so as to give plenty of room for the exercises, and allow the teacher a good view over the pupils—are the things we require in the first room; the apparatus, as I mentioned before, is a secondary question.

It would be well if here, in England, there were an institution similar to the Central Institute in Stockholm, which the Swedish State founded in 1813, under Ling's auspices, to form a constant staff of scientifically trained teachers, as nothing but a scientific basis can keep physical education up to a rational level.\*

It is certainly a good thing that, in training colleges and schools, they are beginning to take up physiology and hygien; but this teaching would gain in real value if the young, alongside with the theory, were taught practically the great truth elicited by Ling—that man has, in his own organs of movement, an efficient means for the preservation of health, and for its restoration when disturbed, provided he wills and knows how to use it; and this is what young people ought to learn to do.

They ought to learn how he who is obliged to lead a sedentary life with much brain-work can, by the performing of Movements during a few minutes when fatigued, better than by any stimulating beverage, give to the brain a new supply of blood necessary to it for carrying on its work. They ought to learn how the eyes may be rested and the danger of congestion to these organs averted, simply by exercising the muscles that move the eye-ball, and so on.†

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\* Besides what is mentioned above, at this Institute, where hundreds of patients are cured yearly, medical men have the opportunity of studying Medical Gymnastics ("The Movement Cure"), and military officers are trained as instructors for the army, the system enabling them to make soldiers of peasants in a few weeks.

The English War Department has lately (1882) sent twelve British officers to Stockholm to inquire into the working of the Swedish training for the army.

† A chapter on the effects of Movements may be found in a little shilling book, entitled, "Home Gymnastics," published by me in 1881 (Isbister and Co.).

There is no doubt that the *Greeks* knew a good deal of the secret of assisting the simultaneous development of mind and body through physical exercises, and you all know that during the most flourishing period of that nation, physical education—or gymnastics—always was carried on alongside, or rather intertwined with, the culture of the mind. (Solon said to Anacharsis, the Scythian, “To us Greeks it is not enough to have a man as nature created him, but we train him by gymnastics, that we may make that much better which nature has done well, and improve what is inferior.”)

The separation of these two, and the losing sight of the educational end of gymnastics for the feats of mere brute force performed by professional athletes (those athletes of whom Hippocrates doubted whether they had a soul!)—characterises the degeneration of that nation.

If so much could be done in the way of physical education at a time when a good deal of the most important biological facts were as yet unknown—when the physicians did not even know the circulation of the blood, but believed that the arteries served as air passages—what ought not *we* to be able to do for the ennobling and amelioration of our race?

Knowing how immensely human beauty was valued by the Greeks, we can infer that they practised physical education mostly for its own sake. To us Christians it should have its greatest value as being a means of making the body the obedient and able servant of our immortal spirit. We should endeavour to ameliorate the physical condition of man as a means to his moral improvement; for is it not at the elevation of the moral standard in man that both physical and intellectual education ultimately should aim?

What is the use of men becoming stronger, healthier, more long-lived, more learned, if with all this they do not become better, more truly human—that is, more God-like?

For within God's own being dwells the human ideal of eternity, and it shall be realised and incarnated in humanity *as a whole*, as surely as it once, in the fulness of time, was realised and incarnated in an individual man. Towards this aim our deepest longing, our innermost feelings, point.

There have been times when people believed they were doing God a service by neglecting their bodies.

Pascal said: "*La maladie est l'état naturel d'un Chrétien*" (Illness is the natural state of a Christian), and Novalis expressed the same belief in his writings.

On the other hand, there have been Gnostic sects who taught that a Christian may permit his body everything, as its actions do not in the least affect the spirit which will get rid of the body for ever at death.

But a real man, a true Christian, wills not to ruin his body either through neglect or vices. He wills to preserve it as perfect as possible, as a sacrifice to God—a temple for God's spirit to dwell in.

He has the hope thus to prepare himself for the state of a more perfect union between spirit and matter, where the bodily element shall share immortality with the spirit.

How this shall be brought about, of this we know as little as we know how it happens that, though our body, through the constant change of matter, is renewed in all its parts in a few months, so that we do not even think with the same brain to-night as we had this day last year, we nevertheless preserve the full consciousness of our identity.



Surely, a living hope of a personal resurrection can greatly contribute to health of mind and body.\*

I need scarcely explain that, when I speak of the necessity of taking care of the body, I do not mean an anxious, over-carefulness about it—self-denial is, no doubt, a useful and necessary exercise. Where a higher duty is concerned, we should be ready to sacrifice our well-being, our health, even our lives.

But till we are called upon for this sacrifice, it is our duty to take care of, and try to render more perfect, our whole being—body as well as mind. And it is our sacred duty to see that the young who are confided to our care, may go out of our hands harmoniously and healthily developed; that is, morally, intellectually, and physically fitted to take up the responsibilities of life.

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\* The above, of course, does not mean that the same body that you lay down in the tomb, rises again; such an idea would be against Scripture (1 Corinth. xv. 37-44), as well as against the revelations of science respecting the circulation of matter.







